# ODL Interventions for Skill Development in Agriculture

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Indian agriculture is at crossroads and is one of the concern areas for the policy makers. The human resource base for the agriculture sector is weak and is one of the neglected components of the sector. The programmes and initiatives being initiated, under the recently launched National Skill Development Mission, can provide an interface for development of human resource for the agriculture sector. The ODL can play a pro-active role in human resource development for agriculture sector and successful implementation of the Skill Development Mission through interventions like: development of competency based curricula and multi-media training modules, designing and implementing the testing and certification mechanism and development of qualification framework. It can also facilitate in creating a value added ICT enabled system. Implementation of skill development mission in area of agriculture through ODL shall ensure wider participation in equity mode. The paper analyses the present agriculture scenario, status of vocational education and skill development in the area of agriculture, potential of Open and Distance learning (ODL) in skill development skill development and issues involved in development and planning of Qualification Framework. It is envisaged that efforts in building the human resource, through a structured and certifiable system shall bring in significant change in the growth of the sector.

## Agriculture the backbone of Indian economy and food security

India is principally an agricultural country. The agriculture sector accounts for about 18.0% of the GDP and employs 52% of the total workforce. There is a continuous steady decline in its contribution towards the GDP, and the agriculture sector is loosing its shine and anchor position in Indian economy. The problems with which the Indian agricultural scenario is burdened in present times are many but this in no way undermines the importance of the sector, and the role it can play in the holistic and inclusive growth of the country. Agriculture is fundamental for sustenance of an economy as is food for a human being. It contributes significantly to export earnings and is an important source of raw materials for many industries.

Its revival is being taken on priority, through various interventions at different levels, because of its potential in reducing poverty and food insecurity. The global experience of growth and poverty reduction shows that GDP growth originating in agriculture is at least twice as effective in reducing poverty as GDP growth originating outside agriculture. Agriculture is and will continue to be the engine of the national growth and development.

**Achievements:** The agriculture sector has made significant strides in the last six decades and the country has transformed its position from the net importer to surpluses for the export. Yields per unit area of all crops have grown since 1950, due to the special emphasis placed on agriculture in the five-year plans and steady improvements in irrigation, technology, application of modern agricultural practices and provision of agricultural credit and subsidies since Green revolution. The food grain production increased by 4 times, horticultural crops and milk by 6 times, fish by 9 times and eggs by 27 times since 1950-51 (www.icar.org.). The country harvested a record 230 million tonnes of food grains, produced 6.87 million tonnes of fish and more than 100 million tonnes of milk during 2008-09. India ranks second worldwide in farm output. The country is the world's largest and the second largest producer of many crops- the largest producer of milk, fresh fruits (47 million tonnes accounting for 10% of the world fruit production) cashew nuts, coconuts, tea, ginger, turmeric and black pepper; second largest producer of wheat, rice, sugar, cotton, silk, peanuts, vegetables (81 million tonnes) and inland fish and the third largest producer of tobacco. We also have the world's largest share of cattle and buffalo population. It was the result of harnessing science & technology that has heralded the Green, White, Blue, and Yellow revolutions in the country. The visible indicators are: increase in per capita food and calorie intake, decline in vulnerability of the Indian agricultural sector to the vagaries of the monsoons, control of price fluctuations, and changing profile of agriculture from subsistence to commercialization. The success has been attained due to commitment of researchers & policy makers and the sustained efforts of the Indian farmers.

**Concerns:** Despite its excellent performance, particularly during green revolution era (1965 – 2000), Indian agriculture today is not as productive, competitive, remunerative and sustainable as expected. The biggest stakeholders –the farmers do not want to participate in its growth. A national sample survey, conducted recently, showed that 40

percent of the farmers want to opt out of their current profession (59th Round of NSSO). GDP per agricultural worker is currently around Rs. 2000 per month, which is only about 75% higher in real terms than in 1950 compared to a four-fold increase in overall real per capita GDP (www.planningcommission.nic.in.). The majority of farmers are economically worse off than the lowest-paid government employee. The average monthly income per household from cultivation has been reported as Rs.1, 578 for small farmers and Rs.8, 321 for the big farmers as against the minimum salary of Rs.10, 000 a month to the lowest-paid government employee (Business Standard, 2008). The widening disparity in per capita income between farm and other than farm sector (the average income in the non-farm sector will be nearly five times what it is in agriculture), the very slow rate of growth in agriculture(paltry 1.3 per cent annual growth in agriculture production over the last 6-7 years), the declining profitability (farmers income rose by a merely 0.28 per cent as compared to 4 per cent in other sectors over the last 5-6 years), extremely weak social security arrangements, weakening family and community based mechanism of social protection, lack of employment opportunities, etc are some of the reasons for farmers or their children opting out of the agriculture profession or leading towards suicide. Every year over about 20,000 farmers commit suicide out of despair over falling crops and high debt (India Today, 2007).

The task is becoming tough for the farmers due to: shrinking natural resources- land area, water, energy inputs; smaller landholding size (70% below 1 hectare in 2003 compared to 56% in 1982); degradation of land and soil, increase in "Wasteland"; pollution of water and poor returns. The ratio of agricultural land to agricultural population has shrunk to 0.3 ha per person in India as compared to over 11 ha per person in the developed countries. The resources are therefore getting marginalized and there is tremendous pressure on natural resources with diversion of agricultural land, water and labour towards industrial, urban and non agricultural sectors. "How to produce enough food without depleting natural resources to feed the growing population" is one of the emerging requirements?" The grim situation is reflected in the quote by an eminent agriculture scientist and the Chairman, National Commission on Farmers- Dr. M.S. Swaminathan "The farming sector is fast heading for total collapse if no rapid remedial measures are taken".

Contributing factors: The contributing factors could be: low productivity- average yield in our country is generally 30% to 50% of the highest average yield in the world; declining public investment in agriculture- as a percentage of GDP has dropped from 3 per cent to around 1.7% per cent in last five years; fragmented land holdings; poorly maintained irrigation systems coupled with inefficient, unsustainable and inequitable allocation of water; large agricultural subsidies are hampering productivity (budgetary subsidies to agriculture have increased from around 3% of agriculture GDP in 1976–80 to about 7% in 2001–03 and fertilizer subsidy has crossed Rs.100,000crore), rudimentary market infrastructure and poor access to markets; poor application of technology, good practices and value addition at farm gate; weak HRD base and almost non-existence of good extension services.

**Targets:** By 2020, India's population is likely to be around 1.33 billion, and under the scenario of 5 per cent growth rate in GDP, the total domestic food grains demand will be 294 million tones (mt) comprising 122 mt of rice, 103 mt of wheat, 41 mt of coarse grains and 28 mt of pulses. Similarly, during 2020, the demand will be 126-183 mt of milk, 136-181 mt of vegetables, 68-98 mt of fruits, 6.3-12.1. mt of meat and 9.5-18.3 mt of fish. To meet the estimated demand, the yield level over the base period yield (1994-95) is required to be enhanced by 136-157 percent. Considering these trends, National Agricultural Policy rightly envisages growth rate in excess of 4 percent per annum in agriculture sector, which is higher than even the highest decadal (1979-80/1989-90) growth rate (3.54%) achieved so far. These growth targets are to be achieved against the constraints of diminishing land resources( it is estimated that area under wheat and rice cultivation is estimated to come down from 170 million hectares to 100 million hectares by 2020), increasing biotic and abiotic stresses, indications of decline in factor productivity, threatened loss of biodiversity, natural resource shrinkage and degradation, climate change, tightening of IPR, intensifying competition (quality and cost) in International trade, widening economic inequity besides burgeoning population.

**Challenges**: The strategy delineated in the Eleventh Plan to accelerate agricultural growth to 4% per annum in the Plan includes action in the following broad areas: (i) bringing technology to the farmers; (ii) improving efficiency of investments, increasing systems support, and rationalizing subsidies; © diversifying, while also protecting food security

concerns, and (d) fostering inclusiveness through a group approach by which the poor will get better access to land, credit, and skills). The mid term appraisal of the eleventh plan reveals that not all aspects of the strategy are doing well and delineated the role and performance of critical inputs ( www.planningcommission.nic.in.).

There is a need to bridge the yield, productivity and production gaps, and ensure sustainable improvement in food security, income, equity, livelihood security, nutrition adequacy and environmental security. Enhancing the economic value of time and labour of landless workforce by bringing about paradigm shift from unskilled to skilled work is one of the important challenges as per the Chairman, National Commission on Farmers (Swaminathan, 2005). The solution lies in achieving significant productivity gains on the farm and simultaneously reducing the number of people who live off agriculture. That means creating more non-agricultural jobs, which in turn means achieving rapid growth in the sectors and activities that generate the maximum number of entry-level jobs.

**Emerging areas for skill development:** The new emerging areas in agriculture include: green food production, hi-tech floriculture, precision farming, protected cultivation, farming system approach, micro-propagation, integrated natural resource management, gene management, integrated pest & nutrients management, production of quality seeds and formation of national seed grid, watershed management, post harvest management & value addition, application of- biotechnology, information and communication technologies, geographic information system(GIS) mapping, space technologies, and conservation of biodiversity of plants, animals, fish and microbes. The major potential of large new job opportunities shall be in the activities related to diversification from cereals to oilseeds and pulses, watershed development for rainfed areas, horticulture, forestry, development of medicinal plants, animal husbandry, social forestry, processing of agro-forest produce, food processing, fishing, and energy plantations. The second green revolution is indeed graduating from grain production to food processing and marketing, and development of vocational & entrepreneurial skills among the farmers and rural youth. The growth target and priorities call for the development of agricultural human resources as an instrument of national transformation.

**Interventions:** The Government of India, convened a special session on Food and agriculture under the ambit of the National Development Council (53rd Meeting held on

29th May, 2007) to address to the agriculture crisis. The new interventions include: (i) Rashtriya Krishi Vikas Yojana (RKVY) has been launched with an outlay of Rs.25, 000 crore for holistic development of agriculture in the XI Plan and (ii) National Food Security Mission (NFSM) with an outlay of about Rs.5000 crore to enhance production of rice, wheat and pulses by 18, 8 and 2 million tonnes, respectively, by the end of the XI plan by concentrating on those areas which have the greatest potential for increase in yields with given technology. The RKVY provides additional financial resource to state governments to finance emerging from district level agricultural plans which take into account district specific agro-climatic constraints. The council resolved that core of the revamp strategy be based upon local needs, resource endowments, capabilities and constraints. The cornerstone of this strategy is to promote region-specific strategies. One of the important components of action plan includes "steps to improve skills of people employed in farm and non-farm sector in rural areas". The National Horticulture Mission which provides support for diversification has been expanded. Similarly, the National Rural Employment Guarantee (NREGA) Act will also be oriented towards the larger objective of enhancing agricultural productivity because the first priority under NREGA is being given to projects aimed at water conservation.

The above steps are essential to reverse the slowdown in the agriculture sector in the backdrop of the goal of the eleventh plan of "Inclusive Growth". The new measures however does not address strongly to one of the weak areas - "fragmented HRD structure in the agriculture sector" which is an essential facilitator to ensure livelihood security/ remunerative employment.

**National Skill Development Mission**

**Salient features:** The aim of the mission is to empowe all individuals through improved skills, knowledge, nationally and internationally recognized qualification to gain access to decent employment and ensure India's competitiveness in the global market. The action plan includes a three tier institutional structure consisting of (i) the Prime Minister's National Council on Skill Development, (ii) National Skill Development Coordination Board and (iii) National Skill Development Corporation to create 500 million skilled persons by the year 2022. Some of the core principles are: (i) encourage and incentivize states to form skill missions; (ii) focus on modularity, open architecture and short term

courses- do not reimburse for courses more than six months; (iii) link financing to outcomes, the overwhelming metric should be jobs; (iv) create infrastructure for the on-job-training and encourage apprenticeships; (v) infrastructure for effective entry/exit gate and effective assessment and credible certification and (vi) use candidates as financing vehicles rather than institutions. The various challenges, objectives and the coverage envisaged are detailed in the Mid-Term Appraisal of the Eleventh Five Year Plan (www.planningcommission.nic.in.).

**Skill Development in the area of Agriculture**

**Weak Agricultural HRD Base**: The concept of HRD in agriculture sector remained a far cry for a considerable period, compared with industrial and service sector. Its weak human capital base and lopsided growth corroborates it i.e. - education is least among agricultural labourers; half of those engaged in agriculture are illiterate; proportion of educated workers (secondary and higher levels) in profession is quite low (just 5% have completed Higher Secondary); only 5-6% of the total graduates are catering to the agriculture system and ratio of para-professionals to professionals is quite low. The system does not exists for preparing middle level human resource i.e. technicians/ supervisors/ entrepreneurs. Even families operating farms now suffer from much smaller holdings and farming members in such families are twice as likely to be illiterate as non-farming members. Ensuring food security and farmer welfare thus require support systems to extend technology and scale benefits in a sustainable manner to a huge existing workforce in agriculture that lacks non-farm skills.

**Vocational Education and skill development Programmes**: The Vocational Education and Training (VET) concept beginning from "*Nai Talim*" has been advocated in all the policy formulations, yet the output in terms of productive human resource is marginal. The VET system in our country is fragmented and its implementation is weak. The focus has been given on the Vocational Education Programme (VEP) at the school level, under the programme of Vocationalisation of Higher Secondary Education, in general education institutions. The PSS Central Institute of Vocational Education, an institute under the NCERT, has been providing academic support to the VEP programme. Thirty–two **competency based curricula for vocational courses** in the discipline of agriculture are available in the areas of: Agri-business, Agriculture Chemicals, Agro-based Food

Industries (Animal Based), Agro-based Food Industries (Feed Based), Agro-based Food Industries (Food Based), Crop production, Dairy Technology, Dairying, Farm Mechanic, Fish Processing Technology, Fish Seed Production, Fishing Technology, Floriculture, Landscaping and Bee-keeping, Horticulture, Inland Fisheries, Marine Fisheries, Medicinal and Aromatic Plant Industry, Plant Protection, Plantation Crops and Management, Post Harvest Technology, Poultry Farming, Processing of Agro-forest Produce, Repair and Maintenance of Power Driven Machinery, Rural Construction Technology, Seed Production Technology, Sericulture, Sheep and Goat Husbandry, Swine Production, Vegetable Seed production, Veterinary Pharmacist-cum-Artificial Insemination Assistant, Veterinary Pharmacist-cum-Technician and Watershed Management. These are offered, with limited success, in various States implementing the VEP. The enrolment under the VEP at the secondary stage is quite less against the target set in the Kothari Commission. An important retarding factor is "inadequacies in implementation of the VEP scheme". The implementation problems are - inadequate infrastructure, limited resources, poor quality of instructions by part time teachers, inadequate well-trained teachers, absence of appropriate linkage between the vocational education system and industry/employer groups and vertical mobility for the pass-outs.

Similarly **ten prevocational modules** are available in the areas of**:** Bee-keeping, Bio-fertilizers, General Horticulture, Milk and Milk Products Milk Production and Handling, Mushroom Cultivation, Plant Protection, Tree-rearing, Social and Agro-Forestry and Vermiculture. The Institute has also prepared **non formal modules** for disciplines of crop production (covering 60 occupations), dairying (covering 90 occupations), fisheries (covering 87 occupations), horticulture (covering 54 occupations) and sericulture (covering 48 occupations).

Limitation: The limitations for the agriculture sector include: non-availability of ITI's and polytechnics to prepare the middle level technicians/ entrepreneurs, limited training infrastructure and orientation of the Apprenticeship system towards industrial sector. The agriculture sector cannot reap the benefit of apprenticeship scheme.

Restructuring: The Vocational Education and Training (VET) are being re-structured in the backdrop of growing unemployment problem among the educated youth and the National Skill Development Mission. The National Knowledge Commission (NKC) in its

report on VET has recommended, “There is an urgent need to redefine the critical elements of imparting vocational education to make them flexible, contemporary, relevant, inclusive and creative. The new ILO recommendations on “Human resources development: Education, training and lifelong learning (No.195)” calls on member States to develop and implement education, training and lifelong learning policies that promote people’s employability throughout their lives. The three pillars identified for building and maintaining individuals’ employability: (a) quality education, (b) pre-employment and (c) learning throughout life.

**Non-formal system:** Under the non-formal system, the various Departments/ Ministries have established the training centres such as Krishi Vigyan Kendras (569 KVKs) and Jan Shiksha Sansthan (earlier known as Shramik Vidyapeeths under the National Literacy Mission are offering around 225 vocational courses, and provide support to NGOs for running vocational training programmes), Khadi and Village Industry Centres ( KVIC), community polytechnics, state institutes of rural development, extension training centres, etc. The schemes associated are: Agricultural Technology Management Agency (ATMA), TRYSEM and PMRY. The outcome of these training programmes is a mixed lot i.e. we have success stories and cases with the marginal impact. There is a paucity of literature and research on effectiveness and critical condition for the success. The operational limitations under the non-formal system are: (i) lack of recognition, (ii) programmes are not standardised, (iii) lack of comprehensive and continuous evaluation of learners, (iii) inadequate supply of teaching-learning materials, (iv) inadequate supervision and monitoring, (v) lack of regular orientation and training for instructors and supervisions and (vi) inadequate linkage with different organisations and schemes. As a result, the potential of non-formal system is not being realised fully.

**Skill Development based on Modular Employable Skills (MES**) – Very few opportunities for skill development are available for the out of school youth and existing workers, especially in the informal sector. Most of the existing skill development programmes are long term in nature. Considering their educational, social and economical background, it was concluded that the poor and less educated persons can not afford long term training programmes due to higher entry qualifications and opportunity cost. Consequently, a new framework for Skill Development for the informal sector has been

evolved by the DGET (Directorate General of Employment and Training – Ministry of Labour and Employment) under the Skill Development Mission to address the above mentioned problems. Modular Employable Skilled (MES) development programme aims to equip people with marketable skills. MES would benefit different target groups like workers seeking certification of their skills acquired informally; workers and ITI graduates seeking skill upgradation, early school drop-outs and the unemployed.

The **MES modules/ courses ( 119 skills/modules)** for the agriculture sector are available in the following five areas: (i) agriculture (40 skills: 23 are in level 1, 16 in level 2 and 1 in level 3), (ii) poultry(31 skills: 21 are in level 1, 6 in level 2 and 4 in level 3), (iii) sericulture ( 26 skills: 10 each in level 1 and 2, 5 in level 3 and 1at level 4) (iv) fisheries (16 skills at level 1), and (v) Food processing and preservation( 1 skill at level 1only) and (vi) Animal Husbandry (5 skills: 4 skills at level 1 and 1 at level 2). The curriculum is approved by the NCVT (National Council of Vocational Training) and the time taken to gain the qualification will vary according to the pathway taken and has been kept very flexible for persons with different backgrounds and experience. The conceptual frame work of MES envisage the following dimensions as advantages: (a) skill development as per market demand, (b) enabling skill up-gradation, and/or multi-skilling, (c) flexible delivery mechanism with multi-entry and multi-exit opportunities, (d) as an alternative training system for life-long learning, (e) recognition of prior learning by testing and certification, (e) system offering accumulation of credits leading to acquire qualification equivalent to National Trade Certificate and (f) Offering of courses of different levels 1 to 3 as per need of employee's organizations. The Department of Agriculture & Cooperation has been identified as the nodal unit for implementing the modular skills, and it is working upon modalities.

**Open and Distance Learning Interventions**

Open & Distance Learning has established its credibility which can respond appropriately to many challenges which exist in our conventional education System. A phenomenal growth is being witnessed in the development and use of Open and Distance Learning (ODL) for the last five to six years. The ODL system in the country has been witnessing around 20% growth-rate in the students' enrolment and is envisaged to cover about 40% of the total enrolment of the Higher Education system. Its impact on the educational system

in the next five years is going to be more pronounced and visible since `learning throughout the life' and `technology-based teaching/learning' have been recognized as the new portals of education. The expansion of ICT network will accelerate the growth of the ODL in the country.

**Programmes at State Agriculture Universities:** Punjab Agriculture University initiated in 1971 to start a non- formal distance education programme titled "Integrated Course in agriculture Production" by enrolling about 250 farmers who were literate enough to read and write the local languages. Since 1973, the G.B. Pant University of Agriculture and Technology has offered a Correspondence Course Programme to farmers and rural youth in Uttar Pradesh, India. About 500 learners each year select four courses from a list of seventeen options (fourteen concern the cultivation of particular crops, and one each concern dairy production, insecticide use and fertilizer use). The Programme's delivery strategy is print-based correspondence. Each course comprises five or six lessons, written in elementary Hindi. Course scheduling is timed to coincide with the seasonal production of the various crops under study. Non-credit certificates are issued to all students passing end of term examinations in each course

**National Institute of Open Schooling (NIOS**) is offering about 12 -15 certificate courses in agriculture and allied areas. The NIOS uses the existing infrastructure of Partner Institutions, like the Governmental Institutions, Industrial Training Institutions (ITIs), the NGOs, and Private Institutions called Accredited Vocational Institutes (AVIs).

**Open Universities**: At tertiary level under the Open and Distance Learning System (ODL), the Yashwantrao Chavan Maharasthra Open University, Nasik was the first to establish School of Agriculture and is implementing a number of agricultural programmes. The unique feature is multimedia mix and farmers support services in teaching learning process. In addition to support of KVK it has created Krishi Prayog Pariwar (15 Self Help Groups), Agri-polyclinics and Radio broadcast.

A Diploma programme in "Agriculture Extension Services for Input Dealers (DAESI)" through Distance Mode has been launched by the National Institute of Agriculture Extension Management, an organization of the Ministry of Agriculture (2004).

**IGNOU**: The School of Agriculture has been actively involved in the skill development in the agriculture and allied sectors in the form of awareness programmes, training

programmes, certificate and diploma programmes over the past five years. The School of Agriculture, IGNOU is offering 17 programmes comprising two awareness, six diploma level programmes, five certificate level and four PG level programmes in the field of agriculture, animal husbandry, food processing, etc. The awareness, certificate and diploma programmes which could be taken up for development of modular employable skills are: (i) Awareness Programme on Value Added Products from Fruits & Vegetables, (ii) Awareness Programme on Dairy Farming, (iii) Diploma in Production of Value Added Products from Fruit & Vegetables, (iv) Diploma in Dairy Technology, (v) Diploma in Meat Technology, (vi) Diploma in Production of Value Added Products from Cereals, Pulses and Oilseeds, (vii) Diploma in Fish Products Technology, (viii) Diploma in Watershed Management (ix) Certificate in Organic Farming, (x) Certificate in Sericulture, (xi) Certificate in Water Harvesting and Management, (xii) Certificate in Poultry Farming and (xiii) Certificate in Bee-keeping. The School has so far organised about 30 training programmes in the north-eastern states in the field of Value Added Products from Fruits and vegetables, meat technology, dairying, fisheries, poultry, piggery, sericulture, entrepreneurship development, watershed management and have trained about 1000 trainees. The School is also organising short duration training programmes (12 nos.) on soil and water conservation throughout the country with the financial support of Dept. of Land Resources, MoRD, GoI.

**ODL Interventions in Skill Development Mission**

The Open & Distance Learning (ODL) can play an instrumental role in development of competency based curricula and multimedia training modules. The extensive network of the programme study centres and counsellors can support the testing and certification framework of modular employable skills. The ODL can be good enabler because of its inherent characteristics such as open access and open pedagogy to design and implement the qualification framework. ODL is a good facilitator for informal mode and can also be a bridge between formal and informal mode of education. The School of Agriculture has proposed the following interventions to the Department of Agriculture and cooperation, the nodal unit for implementing the skill development programme:

(i) Employable skills: Development of curricula and Instructional Media packages (MES Modules) including development of multi-media packages shall comprise: (a) Competency based curricula, (b) Self-instructional illustrated

print material, (c) audiocassettes supported by illustrated cards showing different steps/practices, (d) video programmes for both broadcast and non-broadcast use and (e) Interactive CDs.

(ii) Testing and Certification: Development of assessment criteria based on the Curricula, Identification and recognition of Testing centres, Development of criteria for assessment & Empanelment of assessors and Training of assessors.

(iii) Development of Qualification Framework: qualification framework for different areas.

(iv) Development of ICT Enabled system: having online open repository, inventory of skills, assessors, training centres, testing centres and post training centres.

The specific outcomes through collaborative model (skill development through ODL) shall include: (a) development of competent human resource for agriculture sector, (b) national resource material in emerging vocations, (c) entrepreneurial bias to agricultural vocations, (d) data bank & network facilities for testing and certification mechanism and (e) enhancement in quality and productivity of the sector.

**Development of Qualification Framework:** A qualification framework for the food processing sector is proposed here. It shall involve:

(a) Standardization of skills and corresponding competency(ies)
   i. Competency statement based on the skill requirement: Learning outcome
   ii. Performance Standard for each competency
   iii. Performance Criteria for every performance standard for each basic competency
   iv. Assessment of competencies

(b) Development of Training Package(s) and their translation in vernacular languages
   (i) awareness/ skill development packages for skilled/ neo-literates/ unskilled workers/ farmers,
   (ii) vocational & entrepreneurial certificate and diploma programmes for creation of middle level technicians/ para-professionals and
   (iii) continuing education programmes for the existing professionals
   These packages shall be developed for trainees and trainers and constitution of Expert Groups

(c) Institutional Mechanism for implementation of training an assessment
   i. Identification of training institutions and industries
   ii. Testing Mechanism: Agency for testing
   iii. Accreditation of Institutions and Industries and Trainers

(d) Building up the Management structure

(e) Agency for National Certification

**Conceptual Framework**

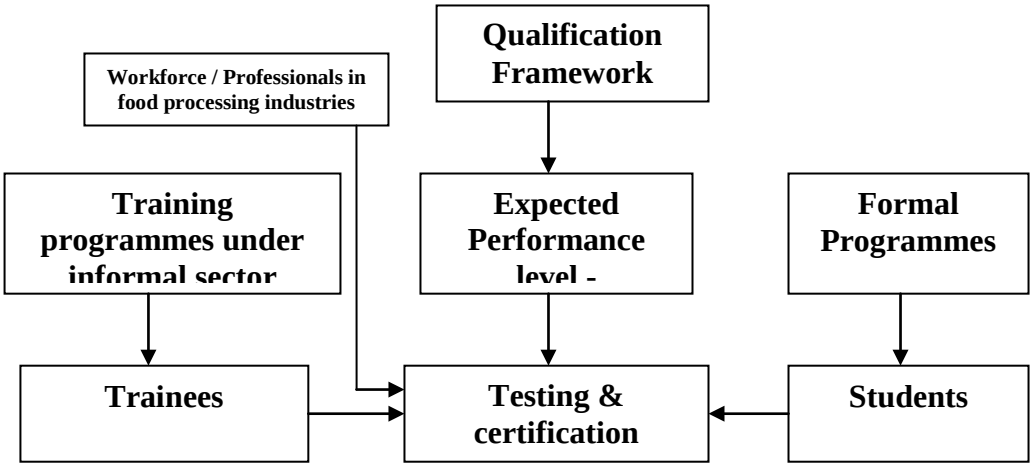


**Table 1 - Hypothetical qualification framework for the Food Processing sector**

| Sl. No. | Proposed level of Food Processor (FP) | Competence equivalent to Job market in organized sector | Tasks under the informal sector : Food Processor/ Entrepreneur | Formal Education | Informal Experience year |
|---|---|---|---|---|---|
| 1. | $FP_1$ | Semi-skilled worker | Cottage level | Primary (0-5) Education | 3 years |
| 2. | $FP_2$ | Skilled Worker | Processor / Trader | Secondary Education (6th to 10th Class) | 3 years |
| 3. | $FP_3$ | Supervisor | Rural Entrepreneur | Sr. Secondary Education | 3 years |
| 4. | $FP_4$ | Sr. Supervisor | Entrepreneur at SSI level | Sr. Secondary Education & Diploma | 3 years |
| 5. | $FP_5$ | Jr. Level Executive | Food Processor & Exporters | Graduate | 8 years |
| 6. | $FP_6$ | Middle Executive | - do - | PG Diploma & Degree | 5 years |
| 7. | $FP_7$ | Middle Executive | - do - | Doctorate | 5 years |
| 8. | $FP_8$ | Sr. Executive | - do - | Doctorate | 5 years |

**Fig. 2: Linking informal training and professional experience with the formal education system training through qualification framework**

**⟶ Pathway for formal training and its linkage with the Diploma programme**

**⇢ Recognition to informal training & experience, and its linkage with the Diploma programme**

**Testing Mechanism**

## Conclusion

Importance of agriculture sector in Indian economy cannot be undermined. The sector along with its significant achievements in form of Green, Blue and White revolution has developed certain stress points over a period. The human resource base for the agriculture sector is weak and there is a growing gap between scientific know-how and field levels do-how. This knowledge deficit should be overcome speedily in order to enhance the productivity and profitability of the small farms. The ODL can play a pro-active role in successful implementation of the Skill Development Mission through interventions like: development of competency based curricula and multi-media training modules, designing and implementing the testing and certification mechanism and development of qualification framework. It can also facilitate in creating a value added ICT enabled system. Implementation of skill development mission in area of agriculture through ODL shall ensure wider participation in equity mode.

**“Give a man a fish and you feed him for a day. Teach a man to fish and you feed him for a lifetime." --Chinese Proverb**

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